

ENTERED



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**RAW SEQUENCE LISTING**  
**PATENT APPLICATION: US/09/923,844B**

**DATE: 05/23/2002**  
**TIME: 17:50:12**

**Input Set : A:\Seqlist.txt**  
**Output Set: N:\CRF3\05232002\I923844B.raw**

4 <110> APPLICANT: Pioneer Hi-Bred International, Inc.  
5 Bao, Zhongmeng  
6 Lu, Guihua  
8 <120> TITLE OF INVENTION: Sclerotinia-inducible Genes and  
9 Promoters and Their Uses  
11 <130> FILE REFERENCE: 35718/234631  
C--> 13 <140> CURRENT APPLICATION NUMBER: US/09/923,844B  
C--> 13 <141> CURRENT FILING DATE: 2001-08-07  
13 <150> PRIOR APPLICATION NUMBER: US 60/224,603  
14 <151> PRIOR FILING DATE: 2000-08-11  
16 <160> NUMBER OF SEQ ID NOS: 20  
18 <170> SOFTWARE: FastSEQ for Windows Version 4.0  
20 <210> SEQ ID NO: 1  
21 <211> LENGTH: 1271  
22 <212> TYPE: DNA  
23 <213> ORGANISM: Helianthus annuus  
25 <220> FEATURE:  
26 <221> NAME/KEY: CDS  
27 <222> LOCATION: (1)...(1114)  
29 <400> SEQUENCE: 1  
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31 Met Glu Phe Leu Lys Ala Pro Thr Leu Leu Val Ile Phe Ser Leu  
32 1 5 10 15  
34 gac att tgt agt cct ata agc gcc caa aac aaa ggg ggt tat tgg cct 96  
35 Ala Ile Cys Ser Pro Ile Ser Ala Gln Asn Lys Gly Gly Tyr Trp Pro  
36 20 25 30  
38 tca tgg gcc caa gat ttt ttg cca cca tcc aat att caa acc gcg tat 144  
39 Ser Trp Ala Gln Asp Phe Leu Pro Pro Ser Asn Ile Gln Thr Ala Tyr  
40 35 40 45  
42 ttc act cat gtt tat tat gct ttt ctc tcc cct aac aat gtc aca ttc 192  
43 Phe Thr His Val Tyr Tyr Ala Phe Leu Ser Pro Asn Asn Val Thr Phe  
44 50 55 60  
46 caa ttc gac gtc cac cgg aca act gcg tct gcg ctc aat agc ttc aac 240  
47 Gln Phe Asp Val His Arg Thr Thr Ala Ser Ala Leu Asn Ser Phe Asn  
48 65 70 75 80  
50 acc gcc ctt cac gga aag aat cca cct gtc aag acg ttg ttt tcc atc 288  
51 Thr Ala Leu His Gly Lys Asn Pro Pro Val Lys Thr Leu Phe Ser Ile  
52 85 90 95  
54 ggt ggt ggc tcg gct ggc gta aaa caa ctc ttt tcc aag ttg gcc tcg 336  
55 Gly Gly Ser Ala Gly Val Lys Gln Leu Phe Ser Lys Leu Ala Ser  
56 100 105 110  
58 agc cct ggc tcg agg gcc gct ttt atc cgt tcg act ata caa gtg gcg 384  
59 Ser Pro Gly Ser Arg Ala Ala Phe Ile Arg Ser Thr Ile Gln Val Ala

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60	115	120	125	
62	cgg aac tat tac ttt gat gga gct gac ttg gat tgg gaa tat cct gaa			432
63	Arg Asn Tyr Tyr Phe Asp Gly Ala Asp Leu Asp Trp Glu Tyr Pro Glu			
64	130	135	140	
66	acc caa acc gat atg aac aac ttt gga ctc ttg ctt gac gag tgg cgt			480
67	Thr Gln Thr Asp Met Asn Asn Phe Gly Leu Leu Leu Asp Glu Trp Arg			
68	145	150	155	160
70	gtg gcg gtc aac aat gaa gcc aca tca act ggt aag cca cga ctt ctt			528
71	Val Ala Val Asn Asn Glu Ala Thr Ser Thr Gly Lys Pro Arg Leu Leu			
72	165	170	175	
74	ctt tca gcc gcc act cgt cat gag cca gaa gtt aga gac aat gga gtt			576
75	Leu Ser Ala Ala Thr Arg His Glu Pro Glu Val Arg Asp Asn Gly Val			
76	180	185	190	
78	gca aag tat cca gtg gca tcc ata aat aag aat ttg gat ggg ata aat			624
79	Ala Lys Tyr Pro Val Ala Ser Ile Asn Lys Asn Leu Asp Gly Ile Asn			
80	195	200	205	
82	gca atg tgt tat gat tat cac ggg cca tgg act ccg gat gca act ggg			672
83	Ala Met Cys Tyr Asp Tyr His Gly Pro Trp Thr Pro Asp Ala Thr Gly			
84	210	215	220	
86	gcc cca gcc gcg tta tat aat cca aat ggc agt ctt agc acc agt aac			720
87	Ala Pro Ala Ala Leu Tyr Asn Pro Asn Gly Ser Leu Ser Thr Ser Asn			
88	225	230	235	240
90	ggg cta caa tca tgg atc agc gct ggg atc caa agg caa aag ttg gtg			768
91	Gly Leu Gln Ser Trp Ile Ser Ala Gly Ile Gln Arg Gln Lys Leu Val			
92	245	250	255	
94	atg ggc atg cca tta tat ggt tgg aca tgg aaa cta aag aat cca tct			816
95	Met Gly Met Pro Leu Tyr Gly Trp Thr Trp Lys Leu Lys Asn Pro Ser			
96	260	265	270	
98	gta aat ggt att ggg gct cca gct gcg ggt ata gga ccg ggt aat gag			864
99	Val Asn Gly Ile Gly Ala Pro Ala Gly Ile Gly Pro Gly Asn Glu			
100	275	280	285	
102	gga gca atg ctt tac tca gaa gtg caa cag ttc aat gcc caa aat aac			912
103	Gly Ala Met Leu Tyr Ser Glu Val Gln Gln Phe Asn Ala Gln Asn Asn			
104	290	295	300	
106	gcc agg gtg gtt tat gac aca caa acc gta tct tat tat tct tac tca			960
107	Ala Arg Val Val Tyr Asp Thr Gln Thr Val Ser Tyr Tyr Ser Tyr Ser			
108	305	310	315	320
110	gga acg act tgg att gga tat gac gat gtt aat tca gta cag aga aag			1008
111	Gly Thr Thr Trp Ile Gly Tyr Asp Asp Val Asn Ser Val Gln Arg Lys			
112	325	330	335	
114	gta caa tat gca aaa tca ctt aac ata gga gga tat ttc ttt tgg aca			1056
115	Val Gln Tyr Ala Lys Ser Leu Asn Ile Gly Gly Tyr Phe Phe Trp Thr			
116	340	345	350	
118	gcc gtc ggc gat caa gat tgg aaa atc tcg cga cta qct tcg cag aca			1104
119	Ala Val Gly Asp Gln Asp Trp Lys Ile Ser Arg Leu Ala Ser Gln Thr			
120	355	360	365	
122	tgg act gct t gaaaatcaat ggaggacaag tgaactagag gagtgaaatt			1154
123	Trp Thr Ala			
124	370			

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126 aaataaaaag attatgtta ctgtgttat tcatgtctt taataaatat tccagttgc 1214  
 127 ttgttaaggtaataaaataa tacacaacca gatgtttaa aaaaaaaaaaaaaaaa 1271  
 129 <210> SEQ ID NO: 2  
 130 <211> LENGTH: 371  
 131 <212> TYPE: PRT  
 132 <213> ORGANISM: Helianthus annuus  
 134 <400> SEQUENCE: 2  
 135 Met Glu Phe Leu Lys Ala Pro Thr Leu Leu Leu Val Ile Phe Ser Leu  
 136 1 5 10 15  
 137 Ala Ile Cys Ser Pro Ile Ser Ala Gln Asn Lys Gly Gly Tyr Trp Pro  
 138 20 25 30  
 139 Ser Trp Ala Gln Asp Phe Leu Pro Pro Ser Asn Ile Gln Thr Ala Tyr  
 140 35 40 45  
 141 Phe Thr His Val Tyr Tyr Ala Phe Leu Ser Pro Asn Asn Val Thr Phe  
 142 50 55 60  
 143 Gln Phe Asp Val His Arg Thr Thr Ala Ser Ala Leu Asn Ser Phe Asn  
 144 65 70 75 80  
 145 Thr Ala Leu His Gly Lys Asn Pro Pro Val Lys Thr Leu Phe Ser Ile  
 146 85 90 95  
 147 Gly Gly Ser Ala Gly Val Lys Gln Leu Phe Ser Lys Leu Ala Ser  
 148 100 105 110  
 149 Ser Pro Gly Ser Arg Ala Ala Phe Ile Arg Ser Thr Ile Gln Val Ala  
 150 115 120 125  
 151 Arg Asn Tyr Tyr Phe Asp Gly Ala Asp Leu Asp Trp Glu Tyr Pro Glu  
 152 130 135 140  
 153 Thr Gln Thr Asp Met Asn Asn Phe Gly Leu Leu Leu Asp Glu Trp Arg  
 154 145 150 155 160  
 155 Val Ala Val Asn Asn Glu Ala Thr Ser Thr Gly Lys Pro Arg Leu Leu  
 156 165 170 175  
 157 Leu Ser Ala Ala Thr Arg His Glu Pro Glu Val Arg Asp Asn Gly Val  
 158 180 185 190  
 159 Ala Lys Tyr Pro Val Ala Ser Ile Asn Lys Asn Leu Asp Gly Ile Asn  
 160 195 200 205  
 161 Ala Met Cys Tyr Asp Tyr His Gly Pro Trp Thr Pro Asp Ala Thr Gly  
 162 210 215 220  
 163 Ala Pro Ala Ala Leu Tyr Asn Pro Asn Gly Ser Leu Ser Thr Ser Asn  
 164 225 230 235 240  
 165 Gly Leu Gln Ser Trp Ile Ser Ala Gly Ile Gln Arg Gln Lys Leu Val  
 166 245 250 255  
 167 Met Gly Met Pro Leu Tyr Gly Trp Thr Trp Lys Leu Lys Asn Pro Ser  
 168 260 265 270  
 169 Val Asn Gly Ile Gly Ala Pro Ala Ala Gly Ile Gly Pro Gly Asn Glu  
 170 275 280 285  
 171 Gly Ala Met Leu Tyr Ser Glu Val Gln Gln Phe Asn Ala Gln Asn Asn  
 172 290 295 300  
 173 Ala Arg Val Val Tyr Asp Thr Gln Thr Val Ser Tyr Tyr Ser Tyr Ser  
 174 305 310 315 320  
 175 Gly Thr Thr Trp Ile Gly Tyr Asp Asp Val Asn Ser Val Gln Arg Lys  
 176 325 330 335

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177 Val Gln Tyr Ala Lys Ser Leu Asn Ile Gly Gly Tyr Phe Phe Trp Thr  
 178 340 345 350  
 179 Ala Val Gly Asp Gln Asp Trp Lys Ile Ser Arg Leu Ala Ser Gln Thr  
 180 355 360 365  
 181 Trp Thr Ala  
 182 370  
 185 <210> SEQ ID NO: 3  
 186 <211> LENGTH: 475  
 187 <212> TYPE: DNA  
 188 <213> ORGANISM: Helianthus annuus  
 190 <220> FEATURE:  
 191 <221> NAME/KEY: CDS  
 192 <222> LOCATION: (34)...(325)  
 194 <400> SEQUENCE: 3

195 aacctctcta accactcatt	aatcccctcc	aaa atg aag gca ccc acc atg atc	54
196		Met Lys Ala Pro Thr Met Ile	
197		1 5	
199 tgc ttt ctg gtt gca att gca gcc atg atg gtc ttt atg ggc caa			102
200 Cys Phe Leu Val Ala Val Ile Ala Ala Met Met Val Phe Met Gly Gln			
201 10 15 20			
203 ctc cct gca gcc act gcg gtg act tgc aac tac atg gag ctc gtg cca			150
204 Leu Pro Ala Ala Thr Ala Val Thr Cys Asn Tyr Met Glu Leu Val Pro			
205 25 30 35			
207 tgt gct ggt gcg atc tca tcg tct cag ccc cca tcg ggc tca tgc tgc			198
208 Cys Ala Gly Ala Ile Ser Ser Gln Pro Pro Ser Gly Ser Cys Cys			
209 40 45 50 55			
211 aqt aag gta agg gag cag agg ccg tgc ttc tgc gga tac ctc cgg aac			246
212 Ser Lys Val Arg Glu Gln Arg Pro Cys Phe Cys Gly Tyr Leu Arg Asn			
213 60 65 70			
215 ccg agt ctc cgt cag ttt gtc agc cca gct gca gcc cag aag att gct			294
216 Pro Ser Leu Arg Gln Phe Val Ser Pro Ala Ala Gln Lys Ile Ala			
217 75 80 85			
219 ayc cag tgt gga gtt agt att cca cag tgc t agaaataatg ttttgtttc			345
220 Ser Gln Cys Gly Val Ser Ile Pro Gln Cys			
221 90 95			
223 aacttatcat aatatcatat attgaaatat tgtgaaataa agtgtgacat gcaactcatc			405
224 tactgatgt aagggtttgt ttgtgttgtt aatgaaacaa aggttagttgg tgggtgtcaa			465
225 aaaaaaaaaaa			475
227 <210> SEQ ID NO: 4			
228 <211> LENGTH: 97			
229 <212> TYPE: PRT			
230 <213> ORGANISM: Helianthus annuus			
232 <400> SEQUENCE: 4			
233 Met Lys Ala Pro Thr Met Ile Cys Phe Leu Val Ala Val Ile Ala Ala			
234 1 5 10 15			
235 Met Met Val Phe Met Gly Gln Leu Pro Ala Ala Thr Ala Val Thr Cys			
236 20 25 30			
237 Asn Tyr Met Glu Leu Val Pro Cys Ala Gly Ala Ile Ser Ser Ser Gln			
238 35 40 45			

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239 Pro Pro Ser Gly Ser Cys Cys Ser Lys Val Arg Glu Gln Arg Pro Cys  
 240 50 55 60  
 241 Phe Cys Gly Tyr Leu Arg Asn Pro Ser Leu Arg Gln Phe Val Ser Pro  
 242 65 70 75 80  
 243 Ala Ala Ala Gln Lys Ile Ala Ser Gln Cys Gly Val Ser Ile Pro Gln  
 244 85 90 95  
 245 Cys  
 249 <210> SEQ ID NO: 5  
 250 <211> LENGTH: 849  
 251 <212> TYPE: DNA  
 252 <213> ORGANISM: Helianthus annuus  
 254 <400> SEQUENCE: 5  
 255 cgtcgtttcg cttgcagggg gataaaagat aatatcatga tcaccattca tcacgcctaa 60  
 256 aattcctccct ctttagtcaat tgtgaatatt ttgttaattat tgtgttagact ataactgtta 120  
 257 tqtctttgca tatatttctc cttgtatatta gccttgtatt ccagtatata atgatataaa 180  
 258 aactctctaa tcaaggcagag agagttccct gaattacatc accgctgcc 240  
 259 ctaagttaac ttcatccatt aattttgtta acgtaaaagg aaattcggtc attttctatg 300  
 260 gccgaattgc ctttgtagtt cacaaaatata catataaaac caccgaatttgc 360  
 261 taacagaaaaa aatgaatgaa gttAACCCAG tggactaaaa tggcaacgat gaaaccattt 420  
 262 tqgatccaca ggcgaaaaat gaaactttt gactaaactg gcgaaaaata aaacttttg 480  
 263 actaaactac atgaactaaa atggcttttta actaaattttt aataaccgtt ttaattttat 540  
 264 aaagagaaaaa taaactttac aaaaagcatc gcttgtctat tttataaaga ttaaagttac 600  
 265 ttgcacgttc aaacatatgt tactagatga atcaagagtc atgtacaact ctatgttttag 660  
 266 ataaggttac tagatgaata tggatgtc atctataatgt ctataacttag aaagttcaaa 720  
 267 gtcaatgatt tggatgttta actgttttta gttgaattca taaaagctt gaataactgtt 780  
 268 tggatgtttaa ttcataaaag ctcgagtata agagatcatg ggattcctcg agtattacaa 840  
 269 cacacgtt 849  
 271 <210> SEQ ID NO: 6  
 272 <211> LENGTH: 1089  
 273 <212> TYPE: DNA  
 274 <213> ORGANISM: Helianthus annuus  
 276 <400> SEQUENCE: 6  
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 278 ttggccatc caaaaggaca aaaatgcact tcatacttac aaaaaaaaaa aaaaaaaaaa 120  
 279 ctaagttatg gattttgatg aaaatgacaa acaaaaggac aaaaatgcac ttcatcttac 180  
 280 caaaaaaaaaa actgagttttag taattttggat gaaaacgaca aaaaaagacaa aacctgaaag 240  
 281 attcaaatgc aaaaaaaaaat tattttggat gaaacacgca tatatgatca aacccaagag 300  
 282 acgattttaa tattttactc gaaattttaa aagaagttaa tatttagacag gaatcatgtt 360  
 283 agagacatata gccaaaccta ttaattttct aagttcaaacc aaaaatctat tattttttcc 420  
 284 aaaccacacg tataattttat gtaattttat ctctataat ggacaaagaa taaaagttt 480  
 285 ctacaaacgg taacaacaag gaagctaccc tcgtttgaa gatagttaa acaataatcc 540  
 286 aactactttc taactacttt tctcacaaga cttaattttc cacacacatc tttatgacta 600  
 287 aatctaccat atgttatggg ccagtcaacc attaatatgt cttaaccac aagtcggtaa 660  
 288 acggaccat cagccacttgc gcccacggcg cagtttagt gaaacccgggg gtgcacaacc 720  
 289 cctctaatgt ttccgtttaga agtgcataat ttacgatttt tcgtccgaaa atttcgccc 780  
 290 accagaactt ttagtcaac ttccgcactg cactttgccc aatgttctat taagttttt 840  
 291 attttatattt tattttttt tataacgatt ccaaaaaattt tttggacata tacatctgac 900  
 292 atgcgttata tggatgttata gaatttgaac tcgcaacctt ttaatttatac gatacatcac 960  
 293 cacctagatt tgaattctca ttggcccaa tggctataa ataatgcacc aaccctcag 1020

**VERIFICATION SUMMARY**

PATENT APPLICATION: US/09/923,844B

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Input Set : A:\Seqlist.txt

Output Set: N:\CRF3\05232002\I923844B.raw

L:13 M:270 C: Current Application Number differs, Replaced Current Application No

L:13 M:271 C: Current Filing Date differs, Replaced Current Filing Date